

said to represent a plexus with numerous longitudinal thickened portions or stems. The passage of the nerves from the brain into the proboscis can very rarely be well observed, because the proboscis is nearly always extruded and torn off when the animal is killed. I may, however, repeat what was noticed above (p. 85), viz., that in *Amphiporus moseleyi*, more particularly, this doubt has now been dispelled. I can observe in my sections that, instead of two strong nerves innervating the proboscis, as in the Palæonemertea and Schizonemertea, a much larger number of branches leave the brain-ring and enter the proboscis in the region of its attachment. That these may dichotomise and give rise to a larger number of longitudinal stems has been already stated by von Kennel (XVI).

This nervous plexus and the longitudinal stems subdivide the longitudinal muscle-layer into an outer and an inner portion, the latter (when the proboscis is everted) being again subdivided into as many longitudinal columns as there are nerve-stems in the proboscis (Pl. XII. fig. 6). Outside and inside of this longitudinal layer there is a circular layer of fibres, outside of the exterior one of these the epithelium.

As to the nerve-stems and the plexus, one specimen of *Amphiporus marioni* showed very distinct cellular accumulations just between each nerve-stem, as if a longitudinal tract of nerve-cells alternated with one of nerve-fibres in the plexus. For the study of this phenomenon fresh specimens will be absolutely necessary. The phenomenon itself has been already noticed, but has not yet been wholly understood, either by von Kennel (XVI) or by Graff (III).

Just as it has been necessary to curtail our observations on the proboscis because of the detailed information already available concerning this important organ, the proboscidian sheath need not be treated at any length in view of the data that are already furnished by others. It is known to be a closed space surrounding the proboscis, having in the majority of cases its own muscular wall, by the contractions of which the fluid contained in the space is driven against the anterior proboscidian attachment. The muscular sheath thus serves to protrude the proboscis as far as the length of the posterior portion—acting as a retractor-muscle—will allow it.

There can hardly be any doubt, when we take into consideration all the morphological data at our disposal, that the muscles composing the proboscidian sheath gradually took their origin by the increase and modification of pre-existing muscular elements, which belonged to the body-wall and to the body-parenchyma before the proboscis, modified from a tactile organ, as it appears to have primitively been, had yet become evolved, through the growth inwards of the anterior tip of the body, into an aggressive weapon, with stylet or nematocysts, &c. We find the shorter proboscidies, and the less significant proboscidian sheaths among the more primitive genera of Nemertea.

*Carinella* has a short proboscis; the dorsal wall of its sheath is still a component part of the musculature of the body-wall; the ventral wall is thin, and only composed of a